

# **Missouri Childhood Lead Poisoning Prevention Program**

**Annual Report for Fiscal Year 2009  
July 1, 2008 – June 30, 2009**



**Missouri Department of Health and Senior Services  
[www.dhss.mo.gov/ChildhoodLead](http://www.dhss.mo.gov/ChildhoodLead)  
573-751-6102 or 866-628-9891**

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This report meets the statutory mandate for an annual report per 701.343, RSMo.

# About Our Program

## PROGRAM MISSION:

Assure the children of Missouri a safe and healthy environment through the primary prevention and identification of lead exposures that may cause illness or death.

The Missouri Department of Health and Senior Services' (DHSS) Childhood Lead Poisoning Prevention Program (CLPPP) was established in 1993 and continues to assure that health care providers have current information and tools available to screen patients six years and younger for lead and provide primary prevention education.

The Childhood Lead Poisoning Prevention Program is staffed by the following positions: A Program Manager, two Health Educators, a Surveillance Coordinator, a Health Program Representative, two Data Entry Personnel and three Environmental Specialists.

State guidelines describe appropriate follow-up of children with elevated blood lead levels (EBL) of at least ten micrograms per deciliter (10 µg/dL), which is the level of concern recommended by the Centers for Disease Control and Prevention (CDC).

Follow-up activities and case management are generally provided for children six years and younger with an EBL  $\geq 10$  µg/dL. These activities help the family understand the causes and health effects of childhood lead poisoning. Environmental risk assessments are conducted to identify potential sources of lead exposure for children with an EBL  $\geq 15$  µg/dL using CLPPP funding. These risk assessments provide the family with information about where lead hazards exist in and around their home. A work plan is developed to reduce these hazards and the risks associated with them. By reducing or eliminating exposures to the environmental sources of lead, the child's current elevation should decrease and repeated elevations prevented. (Note: Children who receive MO HealthNet benefits must have two levels of 15 µg/dL or greater at least three months apart for MO HealthNet (Medicaid) to pay for the environmental risk assessment.)

Lead poisoning prevention educational materials are developed and provided to Missouri citizens at various community venues. DHSS works with the local public health agencies (LPHAs), the medical community, other state agencies, businesses, schools, and community organizations to prevent childhood lead poisoning. The Missouri CLPPP created Leadosaurus, a dinosaur mascot, to promote lead poisoning prevention messages. The Leadosaurus costume may be borrowed from DHSS by any organization in Missouri wanting to increase lead poisoning prevention education and encourage blood lead testing.

The program currently uses the MOHSAIC (MISSOURI HEALTH STRATEGIC ARCHITECTURES & INFORMATION COOPERATIVE) database to collect lead-specific data from medical and lead program activities pertaining to children under the age of six years. This database is part of a tracking system to provide documentation of medical testing, case management and environmental risk assessments statewide. The data is used to provide comprehensive lead case management services and for statistical information. All child and adult lead test information is tracked in MOHSAIC.

# Lead Poisoning in Missouri

Lead poisoning is one of the most common and preventable environmental health problems today. Almost half a million children in the United States are estimated to have elevated blood lead levels of at least 10 µg/dL. According to Missouri blood lead testing data for July 1, 2008 through June 30, 2009, there were 1,071 children under the age of six identified with elevated blood lead levels (1.1% of the 93,739 children tested that year).

The primary lead hazard to children in Missouri is deteriorated lead-based paint. Lead-based paint was banned for residential use nationwide in 1978. Any home built before 1978 may contain leaded paint. The highest risk of lead exposure for children is found in homes built before 1950, when most paint contained a high percentage of lead. More than twenty-three percent (23.6%) of the housing stock in Missouri was built before 1950. Sixty counties in Missouri have greater than twenty-three percent (23.6%) pre-1950 housing stock.

Lead mining and smelting are an important part of Missouri's history. Lead in Missouri was first discovered along the Meramec River by French explorers in the 1700s while searching for gold and silver. Missouri became the dominant lead-producing state in the nation in 1907. It has remained number one ever since. Most early lead production came from the Old Lead Belt district of southeast Missouri in the Park Hills-Bonne Terre area, and in the Tri-State Zinc-Lead district in southwest Missouri around Joplin. Today, all of the state's lead production comes from the New Lead Belt, also known as the Viburnum Trend district. This district is a very narrow, 35-mile-long ore district extending southward from the small town of Viburnum, Iron County, in southeast Missouri. Mining waste products in these areas often end up on driveways, in yards, or even in children's play areas. Dust, air and soil around mining activity have consistently shown elevated levels of lead contamination.

Lead is a shiny, silver-colored metal found naturally in the earth's crust. Lead has historically been used in a variety of ways including in paints, gasoline, batteries, bullets, and some vinyl products, such as mini-blinds. Fine particles of processed or recycled lead and/or lead dust become a health hazard when they are taken into the body through inhalation (breathing) and/or ingestion (swallowing).

Lead affects almost every organ and system in the body. The effects are the same whether it is breathed or swallowed. Lead damages the brain, central nervous system, kidneys, and immune system. Lead in the human body is most harmful to young children under six years of age. It is especially detrimental to children less than three years of age due to their rapidly developing systems.

A blood test is used to determine lead levels. Lead can be measured in blood drawn from a vein or capillary (finger stick). Blood lead levels are measured and reported as micrograms of lead per deciliter of whole blood (µg/dL).

# Statewide Screening Plan

Legislation passed in 2001 required DHSS to promulgate rules and regulations to establish a statewide screening plan. The rules and regulations define criteria for establishing geographic areas in the state considered to be at higher risk for lead poisoning, outline blood lead testing requirements and protocols, and define lead testing follow-up.

In developing these regulations, CLPPP applied Missouri surveillance and census data to establish criteria for Universal Testing (high risk) and Targeted Testing (non-high risk) areas in Missouri. Based upon those criteria, and as required by state statute, the following activities shall occur in

## Universal Testing Areas:

- Any child under the age of six living in or visiting for more than 10 hours per week in the Universal Testing or high risk area will be tested annually for lead.
- Childcare facilities located in Universal Testing Areas must record a “proof of lead testing” signed by the health care provider within 30 days of the child’s enrollment. The statement must verify that a blood lead test was completed in the previous twelve months. If the parent/guardian does not provide proof or a written statement explaining why they do not want the child tested, the childcare facility is to offer the parent assistance in scheduling a blood lead test.

In **Targeted Testing Areas** the following activities shall occur:

- From six months to six years of age, every child will be screened annually, by verbal risk assessment\*, to determine whether they are at high risk for lead poisoning. Risk assessments may indicate the need for blood lead testing at an earlier age (six months) and/or more frequently.

\*The form used for the verbal risk assessment is the [HCY Lead Risk Assessment Guide](#).

- Every child less than age six, found to be at high risk, will be tested for lead poisoning.
- All MO HealthNet eligible children shall be assessed by the Healthy Child and Youth (HCY) Lead Risk Assessment Guide questionnaire and/or be blood lead tested at the ages stipulated by the Federal Program Guidelines (12 months of age, 24 months of age, or 12 to 72 months of age).

During 2009, Audrain County transitioned from Universal to Targeted Testing because the number of children tested increased over a three-year period and the percentage of children identified as having an elevated blood lead level decreased. An updated Missouri Lead Testing Areas map is published every year and is available at:

[www.dhss.mo.gov/ChildhoodLead/Maps.html](http://www.dhss.mo.gov/ChildhoodLead/Maps.html)

## Reporting of Blood Lead Testing

Missouri's diseases and conditions reporting rule ([19 CSR 20-20.020](#)) requires reporting of all blood lead tests both elevated and non-elevated and clarifies demographic patient information required to be submitted with the report. **All blood lead test results are required to be reported to the DHSS regardless of the age of the individual or the reported lead level.**

The following information is required:

- Designate the test conducted
- Results of the test
- Name and address of the attending physician
- Name of the disease or condition diagnosed or suspected
- Date the test results were obtained
- Patient's complete name and home address with zip code
- Patient's age and date of birth
- Patient's sex and race

Healthcare providers should assure that the laboratory they are using is reporting to DHSS.

### LeadCare Analyzers

LeadCare Analyzers are portable and easy-to-use instruments that give results of capillary blood lead samples within minutes. These devices allow the patient to receive a result immediately from the tester. LeadCare Analyzers are very convenient for physician's offices and health departments. These devices:

- Prevent the patient from possibly being referred to an entirely different location to have the test done.
- Save time that would be spent waiting on lab results.

The use of these instruments has increased, both from providers and local public health agencies. All blood lead tests, whether the results are elevated or not, must be reported to the Missouri Department of Health and Senior Services. The data contributes to Missouri's local, regional and statewide statistics on blood lead poisoning.

### Filter Paper Blood Lead Testing

The CDC believes that Filter Paper techniques are acceptable for blood lead testing if health care providers ensure that, as with all blood lead test methods, the chosen laboratory is participating satisfactorily in CLIA certified proficiency testing (PT) Program. The revised CDC position is not an endorsement of the use of filter paper over other techniques for the purpose of sample collection or analysis for blood lead. The mention of this method here is not an endorsement of filter paper lead testing by DHSS. The method is mentioned within this report to provide information regarding other possible methods to accomplish the initial blood lead testing of children. For additional information, contact the nurse in the DHSS Childhood Lead Poisoning Prevention Program at 573-751-6102.



## Housing Risks

Nationally, the average percentage of housing built pre-1950 decreased from 27% in 1990 to 22% in 2000. Missouri is above the national average with 23.6% of housing units being built before 1950. The table below lists the percentage of pre-1950 housing by county according to 2000 census data.

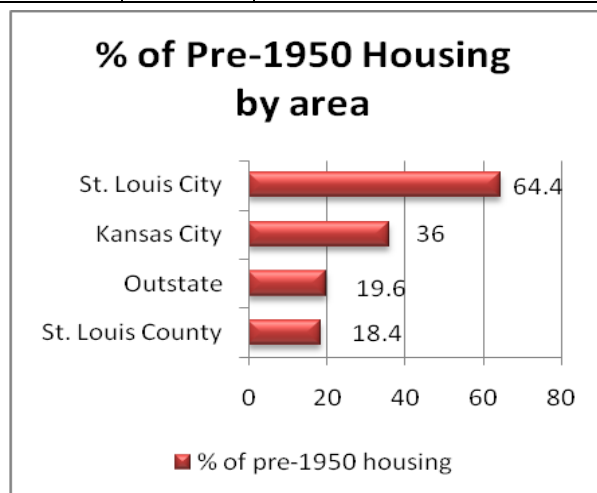
**Percent of Missouri Pre-1950 Housing by County**

County	Pre-1950 Housing %	County	Pre-1950 Housing %	County	Pre-1950 Housing %	County	Pre-1950 Housing %
Adair	25.3	Dallas	19.6	Livingston	35.0	Reynolds	16.4
Andrew	28.6	Daviess	34.7	Macon	37.3	Ripley	15.5
Atchison	51.7	DeKalb	30.9	Madison	23.9	Saline	34.7
Audrain	30.8	Dent	22.1	Maries	24.8	Schuyler	45.5
Barry	21.4	Douglas	22.9	Marion	40.9	Scotland	48.3
Barton	36.6	Dunklin	21.8	McDonald	22.4	Scott	21.6
Bates	33.8	Franklin	18.7	Mercer	37.2	Shannon	20.3
Benton	13.2	Gasconade	30.7	Miller	16.3	Shelby	43.9
Bollinger	20.5	Gentry	46.5	Mississippi	26.8	St. Charles	4.7
Boone	10.5	Greene	18.0	Moniteau	29.6	St. Clair	28.8
Buchanan	43.1	Grundy	42.0	Monroe	31.8	St. Francois	22.2
Butler	17.1	Harrison	46.0	Montgomery	30.2	St. Louis City	64.6
Caldwell	35.1	Henry	27.8	Morgan	11.6	St. Louis County	18.4
Callaway	15.2	Hickory	12.4	New Madrid	19.1	Ste. Genevieve	19.1
Camden	4.1	Holt	46.6	Newton	21.9	Stoddard	19.0
Cape Girardeau	20.0	Howard	39.3	Nodaway	36.1	Stone	8.6
Carroll	43.3	Howell	18.7	Oregon	26.5	Sullivan	45.4
Carter	14.2	Iron	20.5	Osage	27.4	Taney	6.5
Cass	11.6	Jackson	27.8	Ozark	16.3	Texas	20.5
Cedar	22.1	Jasper	30.8	Pemiscot	22.2	Vernon	31.7
Chariton	38.7	Jefferson	10.3	Perry	26.4	Warren	11.6
Christian	8.9	Johnson	15.8	Pettis	30.9	Washington	13.8
Clark	34.4	Knox	45.6	Phelps	16.8	Wayne	16.2
Clay	11.9	Laclede	16.9	Pike	30.1	Webster	19.5
Clinton	28.7	Lafayette	30.5	Platte	8.4	Worth	56.9
Cole	18.8	Lawrence	29.5	Polk	21.5	Wright	26.9
Cooper	36.5	Lewis	35.7	Ralls	23.5	<b>STATEWIDE MISSOURI</b>	<b>23.6</b>
Crawford	19.6	Lincoln	14.8	Randolph	33.2		
Dade	37.6	Linn	43.4	Ray	25.5		

The bar chart to the right indicates the percentages of pre-1950 housing stock in the largest metropolitan areas in Missouri. St. Louis City's housing is comprised of 64.4% pre-1950 housing. St. Louis County contains 18.4% and Kansas City contains 36%.

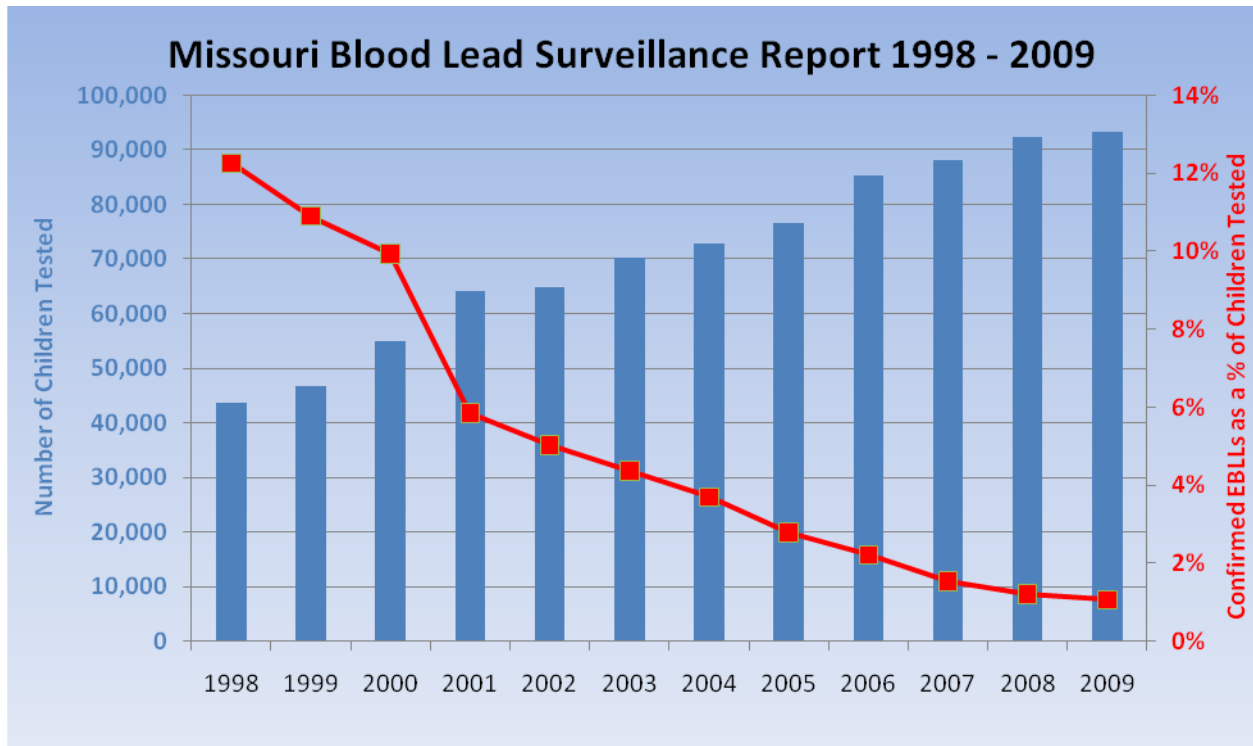
All other areas of Missouri (outstate) average 19.6% pre-1950 housing.

From the 2010 Consolidated Plan,  
Missouri Department of Economic Development



## Testing and Prevalence

The number of Missouri's children less than six years old who have been tested for lead poisoning has increased from 50,362 in 2000 to 93,739 in 2009. Of the children tested, the percentage found to have elevated blood lead levels (10 µg/dL or greater) has declined from 11.1% in 2000 to 1.1% in 2009. This decrease mirrors a nationwide decrease in children's blood lead levels. In 2009, of the 93,739 children in Missouri who received a blood lead test, 1,071 had blood lead levels 10 µg/dL or greater.



### A few highlights from 2009 testing data...

- There were 93,739 children tested for lead during 2009.
- There were approximately 30.89% of children tested in the Universal Testing Areas in 2009 (24,696 of an estimated 79,939 children under age six in Universal Testing Areas).
- The number of children found to have an EBL decreased from 5,588 in 2000 to 1,071 in 2009.
- Of children tested in Missouri, 1.1% have an elevated blood lead level.

A summary of county level blood lead testing data for the period July 1, 2008 through June 30, 2009 is presented on the following pages.



## Blood Lead Testing Data by County

For the period of July 1, 2008 through June 30, 2009 for Children Less Than Six Years of Age

COUNTY	<u>Blood Lead Levels in mg/dL</u>								2000 Census Pop.	% of Pop Children tested	# of Children >10 mg/dL	% Elevated >10 mg/dL
	<10	10- 14.9	15- 19.9	20- 24.9	25- 44.9	45- 69	>69	TOTAL				
Adair	465	1	0	0	0	0	0	466	1,592	29%	1	0.2%
Andrew	205	3	0	0	0	0	0	208	1,292	16%	3	1.4%
Atchison	60	0	0	0	0	0	0	60	367	16%	0	0.0%
Audrain	396	4	0	0	0	0	0	400	2,018	20%	4	1.0%
Barry	405	3	0	0	0	0	0	408	2,745	15%	3	0.7%
Barton	206	0	0	0	0	0	0	206	1,147	18%	0	0.0%
Bates	232	6	4	0	0	0	0	242	1,260	19%	10	4.1%
Benton	214	0	2	0	0	0	0	216	973	22%	2	0.9%
Bollinger	272	0	0	0	0	0	0	272	888	31%	0	0.0%
Boone	2,211	3	4	1	0	0	0	2,219	10,158	22%	8	0.4%
Buchanan	1,297	22	8	2	2	0	1	1,332	6,488	21%	35	2.6%
Butler	595	1	0	1	1	0	0	598	3,132	19%	3	0.5%
Caldwell	229	1	0	0	0	0	0	230	687	33%	1	0.4%
Callaway	501	2	0	0	0	0	0	503	3,088	16%	2	0.4%
Camden	329	0	0	0	0	0	0	329	2,083	16%	0	0.0%
Cape Girardeau	622	4	0	1	0	0	0	627	4,940	13%	5	0.8%
Carroll	204	2	3	1	0	0	0	210	782	27%	6	2.9%
Carter	122	1	0	0	0	0	0	123	436	28%	1	0.8%
Cass	970	1	0	0	0	0	0	971	7,347	13%	1	0.1%
Cedar	190	1	0	0	0	0	0	191	932	20%	1	0.5%
Chariton	115	0	0	0	0	0	0	115	517	22%	0	0.0%
Christian	886	2	0	1	0	0	0	889	4,987	18%	3	0.3%
Clark	96	0	0	0	0	0	0	96	548	18%	0	0.0%
Clay	763	0	1	0	0	0	0	764	15,744	5%	1	0.1%
Clinton	287	4	0	1	0	0	0	292	1,498	19%	5	1.7%
Cole	856	6	2	0	1	0	0	865	5,529	16%	9	1.0%
Cooper	297	0	0	0	1	0	0	298	1,179	25%	1	0.3%
Crawford	386	5	0	0	1	0	0	392	1,810	22%	6	1.5%
Dade	103	0	0	0	0	0	0	103	547	19%	0	0.0%
Dallas	158	1	0	0	0	0	0	159	1,274	12%	1	0.6%
Daviess	148	2	1	0	0	0	0	151	665	23%	3	2.0%
Dekalb	169	4	0	0	0	0	0	173	714	24%	4	2.3%
Dent	281	4	0	0	0	0	0	285	1,154	25%	4	1.4%
Douglas	224	0	0	0	0	0	0	224	945	24%	0	0.0%
Dunklin	432	1	0	0	0	0	0	433	2,807	15%	1	0.2%
Franklin	852	0	0	1	0	0	0	853	7,814	11%	1	0.1%
Gasconade	192	1	0	0	0	0	0	193	1,067	18%	1	0.5%
Gentry	110	1	0	0	0	0	0	111	524	21%	1	0.9%
Greene	3,396	11	3	3	0	0	0	3,413	17,657	19%	17	0.5%
Grundy	235	3	0	0	0	0	0	238	779	31%	3	1.3%
Harrison	193	1	1	0	0	0	0	195	662	29%	2	1.0%
Henry	314	0	1	0	2	0	0	317	1,554	20%	3	0.9%
Hickory	112	0	0	0	0	0	0	112	460	24%	0	0.0%
Holt	118	1	0	0	0	0	0	119	313	38%	1	0.8%
Howard	199	1	0	1	0	0	0	201	693	29%	2	1.0%
Howell	256	0	0	0	0	0	0	256	2,993	9%	0	0.0%
Iron	329	7	4	0	2	0	0	342	760	45%	13	3.8%
Jackson	15,001	47	21	8	7	0	0	15,084	54,836	28%	83	0.6%
Jasper	2,820	22	5	3	0	0	0	2,850	9,070	31%	30	1.1%
Jefferson	1,917	11	4	2	1	0	0	1,935	17,184	11%	18	0.9%
Johnson	584	2	0	0	0	0	0	586	3,857	15%	2	0.3%
Knox	96	0	1	0	0	0	0	97	323	30%	1	1.0%
Laclede	695	0	1	0	0	0	0	696	2,683	26%	1	0.1%
Lafayette	538	0	0	0	0	0	0	538	2,460	22%	0	0.0%
Lawrence	521	4	2	0	0	0	0	527	3,034	17%	6	1.1%
Lewis	160	1	0	0	0	0	0	161	890	18%	1	0.6%
Lincoln	514	1	2	0	1	0	0	518	3,446	15%	4	0.8%
Linn	300	2	1	0	0	0	0	303	1,028	29%	3	1.0%
Livingston	260	4	0	0	1	0	0	265	1,090	24%	5	1.9%

COUNTY	Blood Lead Levels in mg/dL								2000 Census Pop.	% of Pop Children tested	# of Children >10 mg/dL	% Elevated >10 mg/dL
	<10	10- 14.9	15- 19.9	20- 24.9	25- 44.9	45- 69	>69	TOTAL				
Macon	332	0	0	0	0	0	0	332	1,205	28%	0	0.0%
Madison	132	1	1	0	0	0	0	134	835	16%	2	1.5%
Marion	115	0	0	0	0	0	0	115	710	16%	0	0.0%
Marion	683	10	3	3	1	2	0	702	2,278	31%	19	2.7%
McDonald	371	1	1	0	0	0	0	373	2,003	19%	2	0.5%
Mercer	93	1	0	0	0	0	0	94	248	38%	1	1.1%
Miller	268	0	0	0	0	0	0	268	1,925	14%	0	0.0%
Mississippi	456	1	1	0	0	0	0	458	1,153	40%	2	0.4%
Moniteau	274	3	0	0	0	1	0	278	1,206	23%	4	1.4%
Monroe	166	2	0	0	1	0	0	169	739	23%	3	1.8%
Montgomery	229	0	0	0	1	0	0	230	858	27%	1	0.4%
Morgan	167	0	0	0	0	0	0	167	1,393	12%	0	0.0%
New Madrid	378	3	0	0	0	0	0	381	1,580	24%	3	0.8%
Newton	937	2	1	0	0	0	0	940	4,458	21%	3	0.3%
Nodaway	169	0	0	0	0	0	0	169	1,266	13%	0	0.0%
Oregon	182	2	0	0	2	0	0	186	732	25%	4	2.2%
Osage	158	1	0	0	0	0	0	159	1,057	15%	1	0.6%
Ozark	152	0	0	0	0	0	0	152	619	25%	0	0.0%
Pemiscot	288	1	0	0	0	0	0	289	1,981	15%	1	0.3%
Perry	207	0	0	0	0	0	0	207	1,489	14%	0	0.0%
Pettis	866	11	3	1	1	0	0	882	3,298	27%	16	1.8%
Phelps	730	3	1	0	0	0	0	734	2,769	27%	4	0.5%
Pike	247	2	2	0	0	0	0	251	1,190	21%	4	1.6%
Platte	316	0	0	0	0	0	0	316	6,044	5%	0	0.0%
Polk	530	1	2	0	1	0	0	534	2,204	24%	4	0.7%
Pulaski	357	0	0	0	0	0	0	357	3,778	9%	0	0.0%
Putnam	76	0	0	1	0	0	0	77	382	20%	1	1.3%
Ralls	172	1	1	0	0	0	0	174	667	26%	2	1.1%
Randolph	397	6	2	1	1	0	0	407	1,899	21%	10	2.5%
Ray	316	2	0	2	0	0	0	320	1,875	17%	4	1.3%
Reynolds	72	1	0	0	0	0	0	73	474	15%	1	1.4%
Ripley	224	0	0	0	0	0	0	224	980	23%	0	0.0%
Saline	506	8	0	0	0	0	0	514	1,737	30%	8	1.6%
Schuyler	106	1	0	0	0	0	0	107	316	34%	1	0.9%
Scotland	99	1	0	1	0	0	0	101	421	24%	2	2.0%
Scott	817	1	0	0	0	0	0	818	3,430	24%	1	0.1%
Shannon	74	0	0	0	0	0	0	74	611	12%	0	0.0%
Shelby	198	0	0	1	0	0	0	199	480	41%	1	0.5%
St Charles	2,266	7	1	0	0	0	0	2,274	26,072	9%	8	0.4%
St Clair	94	1	0	0	0	0	0	95	628	15%	1	1.1%
St Francois	869	18	8	2	1	0	0	898	4,040	22%	29	3.2%
St Louis City	13,358	323	85	27	31	3	0	13,827	28,369	49%	469	3.4%
St Louis Co	15,802	72	14	8	8	0	0	15,904	77,612	20%	102	0.6%
Ste Genevieve	274	1	0	0	0	0	0	275	1,314	21%	1	0.4%
Stoddard	520	5	0	0	0	0	0	525	2,048	26%	5	1.0%
Stone	280	1	0	0	0	0	0	281	1,866	15%	1	0.4%
Sullivan	234	2	0	0	0	0	0	236	618	38%	2	0.8%
Taney	466	2	0	1	0	0	0	469	2,909	16%	3	0.6%
Texas	181	0	0	0	0	0	0	181	1,612	11%	0	0.0%
Vernon	324	1	1	0	0	0	0	326	1,628	20%	2	0.6%
Warren	370	0	0	0	0	0	0	370	1,929	19%	0	0.0%
Washington	387	13	2	0	0	0	0	402	1,844	22%	15	3.7%
Wayne	137	1	1	0	0	0	0	139	850	16%	2	1.4%
Webster	326	2	0	0	0	0	0	328	2,839	12%	2	0.6%
Worth	47	0	0	1	0	0	0	48	152	32%	1	2.1%
Wright	235	0	0	1	0	0	0	236	1,496	16%	1	0.4%
<b>TOTAL</b>	<b>92,668</b>	<b>719</b>	<b>201</b>	<b>76</b>	<b>68</b>	<b>6</b>	<b>1</b>	<b>93,739</b>	<b>445,566</b>	<b>21%</b>	<b>1,071</b>	<b>1.1%</b>

# Activities Funded by the CLPPP Grant

## Contracts

St. Louis City, St. Louis County, and Kansas City are Missouri's three largest metropolitan areas. According to 2000 census data and 2009 surveillance data, these three areas combined contain 61% of Missouri's children with elevated blood lead levels (654 of 1,071). To decrease the prevalence of EBL's in these areas, DHSS contracts with the LPHAs to provide lead poisoning prevention educational activities and environmental risk assessments.

Environmental contracts were established for other regions of the state to assure that children with an EBL receive an accurate and timely environmental risk assessment. These contracts provide EBL risk assessments for 45 of the 114 counties. CLPPP Environmental Specialists provide EBL risk assessments in the remaining counties. The contracts resulted in more complete and timely compliance with reporting of risk assessment data to track compliance with remediation recommendations.

## Lead Poisoning Prevention Education

CLPPP develops an educational campaign and distributes materials to advocates statewide each year. The campaign goal is to provide stakeholders with the tools necessary to promote lead poisoning prevention. Themes, fact sheets, posters, and public service announcements are examples of campaign materials. The materials are used during lead poisoning prevention month to intensify the statewide effort. The "What's On Your Walls?" campaign flyers and posters were distributed to stakeholders statewide in 2009 and are archived on the CLPPP website.

CLPPP also develops and distributes a newsletter each year for local and state partners. The NewsLEADER contains resource information such as new publications available, websites, and tips for successful public outreach. Stakeholders are encouraged to share their lead poisoning prevention activities and ideas. Several educational brochures and fact sheets that focus on specific lead related issues such as "Lead Safety at Work" and "Pregnancy and Lead Poisoning" are also available and can be ordered for community-wide use.

Educational materials are also available and displayed at health fairs, home shows, blood lead testing events and other public events when possible. Display boards are decorated with lead posters, signs, facts, and other educational materials. The CLPPP mascot Leadosaurus also makes guest appearances at health fairs and other community events. The display boards and Leadosaurus are helpful to capture people's attention and draw them in to learn about lead poisoning prevention and other healthy homes topics.

Campaign information, newsletters, fact sheets, booklets and other publications are all available to the public on the CLPPP webpage [www.dhss.mo.gov/ChildhoodLead/index.html](http://www.dhss.mo.gov/ChildhoodLead/index.html).

The webpage also features: upcoming events, lead testing guidelines, Missouri lead testing maps, product recalls, data and statistical reports, laws, regulations and manuals.



# Collaborations

## Case Management Services

Case Management of children with elevated blood lead levels involves coordinating, providing and overseeing the services required to reduce the child's blood lead level to less than 10 µg/dL, the CDC level of concern. It is based on the efforts of an organized team and is child and family centered. Case management services may be provided by the child's primary care physician, a local public health agency, a MO HealthNet Managed Care health plan, or another contracted agency. CLPPP and MO HealthNet staff monitor case management for children identified with a blood lead level greater than or equal to 10 µg/dL using and document follow-up services in MOHSAIC.

## Environmental Services

The Missouri Public Health System provides lead risk assessment services to detect hazardous sources of lead exposure in children's homes. This service is provided for children age six and younger who have a venous confirmed blood lead level of 15µg/dL or greater.

A risk assessment is conducted by a professional trained and licensed by the Lead Licensing Program. The assessor consults with the child's family to determine areas of the home where the child spends the most time. X-ray Fluorescence Analyzers (XRF's) are used to analyze structure surfaces such as doors, walls, windows. Dust, soil and water samples are collected to determine if and where lead hazards exist. Upon completing the assessment and receiving the lab analysis, the risk assessor provides the property owner and/or occupant (if other than the owner) with recommendations for reducing lead hazards. The risk assessor revisits the home at an agreed-upon time to assure lead hazard reduction has been accomplished.

## Healthy Homes

Since the beginning of the "Is Your Home Healthy?" exhibit in 2007, the exhibit has been adapted for use at a variety of events throughout the state. The main exhibit features two Bureau of Environmental Epidemiology programs, the Childhood Lead Poisoning Prevention Program and the Indoor Air/Radon Program. The exhibit sometimes features a dollhouse, on loan from the St. Louis County Health Department, showing where environmental hazards may be found in the home. Information is available to the public on a variety of topics including lead poisoning prevention, radon and mold remediation, the fishing consumption advisory, asbestos-containing vermiculite insulation, carbon monoxide poisoning, heat or cold illness prevention, mercury handling and disposal, and other topics as appropriate for the event and audience. Coloring and activity books, sponges, magnets and stickers are available to capture the interest of guardians and children. Program staff members are available to answer questions about environmental health concerns from citizens. The exhibit also features hand washing information from the Bureau of Communicable Disease Control and Prevention and tick and mosquito repellent information from the Vector Borne Disease Program.



Special guest appearances by Leadosaur (the CLPPP mascot) thrill children of all ages. This year, Leadosaur posed with Fred Bird (St. Louis Cardinal's mascot) at a community event in Florissant that was attended by more than 1,000 participants.

Between July 1, 2008 and June 30, 2009 "Is Your Home Healthy?" was displayed at 15 different venues across the state. These included the new Local Public Health Administrators Training, St. Louis Home and Remodeling Shows, Missouri Milk Food and Environmental Health Association Conference, Children's Trust Fund Conference, School Nurses Conference, Medical Conferences, Parents as Teachers children's events and the Southeast Missouri Fair.

The "Is Your Home Healthy?" exhibit is an ongoing collaborative effort between Bureau of Environmental Epidemiology programs, the Lead Licensing Program, the Bureau of Communicable Disease Control and Prevention, the Vector Borne Disease Program, and the local health departments. This outreach effort is helping to build partnerships with outside organizations such as Parents as Teachers, child advocates, school nurses, contractors, environmental health professionals, senior citizen groups and parents. At the same time, it is providing valuable information to and educating the citizens of Missouri about environmental hazards in their homes.

### **Agency for Toxic Substance and Disease Registry (ATSDR)/Environmental Protection Agency (EPA)/Missouri Department of Natural Resources (DNR)**

Lead mining, milling and smelting has occurred throughout the lower half of Missouri. Missouri ranks as the top lead-producing state in the nation. Across the state, there are at least 32 Missouri counties containing hazardous lead-bearing substances.

In St. Francois County, six large mine tailings and chat piles from past mining and milling operations are located near residential areas. Tailings and chat piles are "mining waste" or the waste from the processing of lead ore. Over time, mine waste has migrated off the waste piles and ponds into the surrounding community. The migration has been caused by wind or water erosion, or from human activities, such as using the lead waste as fill material in yards or driveways. Madison County also contains lead mine tailings piles from which people have used chat for traction along roads in winter and as fill in sandboxes. Similar situations have occurred in Jasper and Newton counties. Newton County, Madison County, the Annapolis Leas Mines, Potosi, Old Mines and Richwoods have all been placed on the EPA's National Priorities List. In addition, there is an active lead smelter in Herculaneum, Missouri. The smelter processes lead concentrate from current mining and milling operations into lead ingots for further use in consumer products like batteries and computers.

DHSS, along with other state, local and federal agencies (including ATSDR, EPA, and DNR) are addressing these sites to protect public health. Multiple actions have been taken to reduce human exposure and prevent lead poisoning, especially to children less than six years old. Some of the actions taken by partnering agencies at the various sites to reduce exposure include monitoring of air, sampling of soil, water and dust, stabilization of the tailings piles, yard soil removals, street

cleanings, interior home cleaning, reduction in smelter air emissions, and special blood lead testing events. Additional activities conducted by DHSS include health studies, health consultations, public health assessments, and ongoing educational activities.

## **BROWNFIELD PROJECT**

A campaign to increase testing for lead in private drinking water was made possible with funding from ATSDR Grant 1E11TS000092-0. Studies have shown that residential exposure to mining, milling, and smelting wastes is related to a high percentage of children with elevated blood lead levels. Sixty Missouri counties have been identified as having possible impacts from mining, milling, smelting, and transportation of mining materials. Lead in drinking water has long been recognized as a contributor to childhood lead poisoning. The EPA estimates that 10 to 20 percent of exposure to lead may come from lead in drinking water. Infants consuming mixed formula may receive as much as 40 to 60 percent of their exposure to lead from drinking water.

As an effort to increase testing for lead in drinking water, the Bureau of Environmental Epidemiology (BEE) has developed new educational materials: “Testing Your Drinking Water for Lead” brochure, “Important Information about Lead in your Drinking Water” fact sheet, and a “Lead in Water” [poster](#). The fact sheet describes health concerns with lead and options for reducing exposure. It can be provided along with test results to assist in responding to homeowner concerns for those identified with lead in their drinking water. For more information, contact BEE at 573-751-6102.

## **DHSS Lead Licensing Program**

The Lead Licensing Program is responsible for licensing workers who conduct lead abatement, inspections and risk assessments. Employees of this section may make surprise site visits to check that all workers have the proper current license and also that lead abatement is being conducted correctly and safely. This is to ensure the safety of the residents who may not know the harmful effects of improper lead work practices. Like CLPPP, the Lead Licensing Program plays an important role in keeping people healthy and safe from lead poisoning. All risk assessors that are a part of CLPPP are licensed and overseen by the Lead Licensing Program. Training collaborations included risk assessors and staff trained by a representative for Thermo Scientific NITON XRF Analyzers. Eleven new models were purchased to replace outdated ones.

## **Missouri Department of Social Services (MDSS), MO HealthNet Division (MHD)**

Poverty is one risk factor for lead poisoning. DHSS and MHD have had a cooperative agreement in place since 1998. This agreement outlines the agencies’ mutual objectives regarding childhood lead poisoning to: 1) assure that MO HealthNet eligible children are screened/tested according to the Statewide Lead Testing Plan; and 2) assure that medically necessary services are provided for MO HealthNet eligible children whether by a MO HealthNet enrolled provider or MO HealthNet Managed Care health plan for the correction or amelioration of lead poisoning-related conditions identified through a full or partial Early Periodic Screening Diagnostic Test.

CLPPP assesses the MO HealthNet status of all Missouri children with confirmed blood lead levels 10 µg/dL or greater via inquiry into the MO HealthNet database. The MO HealthNet status is coded into MOHSAIC to generate reports of EBL children that are sent to MHD. These reports are then forwarded to each MO HealthNet Managed Care health plan by MO HealthNet staff for follow up. Case management activities for the MO HealthNet Managed Care health plan



children are documented directly into the MOHSAIC Lead Case Management Application by the MO HealthNet Managed Care health plan lead case managers. This helps to facilitate greater communication regarding follow up of EBL children among the MO HealthNet Managed Care health plans, MHD, DHSS and the local public health agencies.

System changes will be occurring in the future to provide MO HealthNet the ability to generate reports of EBL children for each MO HealthNet Managed Care health plan on demand and forward these to each health plan respectively.

### **Women, Infant, and Children (WIC) Program**

High blood lead levels that affect intelligence, behavior and development of children less than six years of age disproportionately affect minority and poor children. The Special Supplemental Nutrition Program for WIC is an important partner in efforts to combat the health risks of lead poisoning. By identifying high-risk children through a screening process during WIC clinic visits, referring children to their primary care provider for testing, or making blood lead testing available on-site, the likelihood that every child will be tested is improved. This practice also helps assure timely and appropriate follow-up care in the event a child is found to have an elevated blood lead level. Copies of the Sesame Street Lead Away program were provided to WIC clinics for presenting lead poisoning prevention education to their clients.

### **Missouri Department of Economic Development**

The Missouri Department of Economic Development (DED) currently works with cities and counties to assure that Community Development Block Grant (CDBG) funding is made available for properties where children have been identified with an EBL. DHSS works with DED to locate funding for remediation. The 2010 Consolidated Plan produced by DED includes Targeted and Universal Testing Area maps and blood lead testing data by county for the state.

### **Missouri Local Public Health Agencies (LPHA's)**

Many LPHA's offer blood lead testing within their counties. Some agencies offer free blood lead testing or referrals to providers that offer testing. Most of these agencies have a nurse that assists with case management for children who have EBL's; however, this nurse works in collaboration with the child's primary care physician, parent or guardian, and environmental risk assessors. CLPPP staff collaborates with LPHA staff on EBL cases to provide adequate case and lead hazard management. Education and outreach is often offered at the local level at health fairs, physicians' offices, childcare facilities, during lead poison prevention campaigns and upon request. The CLPPP program provides these agencies with educational materials and technical assistance for any other issues such as the use of the MOHSAIC application or training on program and regulatory requirements. LPHA's support and efforts play a key role in the goal to eliminate childhood lead poisoning.

### **Meramec Regional Planning Commission (MRPC)**

Although CLPPP funding is not used for abatement services, CLPPP staff established a contract with the Meramec Regional Planning Commission (MRPC) to provide lead abatement in homes within a 175 mile radius of MRPC's office. Priority is given to income qualified families with EBL children. Abatement work began in 2009. Two properties were abated during the grant year and others are currently under consideration.



## **Missouri State Medical Association and Missouri Academy of Family Physicians**

CLPPP staff has contacted two statewide medical associations and will be sponsoring presentations by Dr. Jennifer Lowry in FY10. The presentations will provide current information to remind physicians of their responsibility to comply with Missouri state regulations regarding childhood lead poisoning prevention and testing requirements.

For more information on lead poisoning prevention contact:

Missouri Department of Health and Senior Services  
Childhood Lead Poisoning Prevention Program

930 Wildwood Dr.

Jefferson City, MO 65109

Phone: (573) 751-6102 or (866) 628-9891

Or visit our website at:

**[www.dhss.mo.gov/ChildhoodLead](http://www.dhss.mo.gov/ChildhoodLead)**